CANADIAN JOURNAL OF AGRICULTURAL SCIENCE

(formerly "*Scientific Agriculture*")

VOLUME 34

January 1954 - December 1954

EDITED BY THE
AGRICULTURAL INSTITUTE OF CANADA
OTTAWA, CANADA

Published bi-monthly by the authority of the Chairman of the National Committee on Agricultural Services

SUBJECT INDEX TO VOLUME 34

PAGE

Alfalfa for pasture, Developing creeping-rooted 269
Alfalfa in Quebec, Soil and plant analysis as a means of diagnosing boron deficiency in 494
Alfalfa stems and leaves as an aid in diagnosing alfalfa yellows, Pathological histology of boron-deficient 488
Aluminum foil planting boxes for greenhouse experiments 432
American foulbrood of the honeybee and on the stability of sulpha drugs in honey, Note on current studies on the chemotherapy of 120
Antibiotic feed supplements in western Canadian swine rations 343
Apple seedlings obtained from controlled crosses, Resistance trials on 539
Apples, The use of the triethanolamine salt of 2, 4, 5-trichlorophenoxypropionic acid as a stop-drop spray for 65
Ascochyta diseases of peas in Canada—with special reference to seed transmission. 417

Bacon hogs, Seaweed meal in the ration for 181
Barley by irradiation, The production of beneficial mutations in 1
Barley, Note on the effect of ultrasonic vibration on development of 651
Barley, The inheritance of rachis strength in 152
Barley varieties to rye stem rust, *Puccinia graminis* var. Secalis, The reaction of .. 473
Beet and garden beet seedlings treated with sodium TCA and Dalapon, Improvement in low temperature resistance of sugar 639
Blood of cattle, The effect of feeding sweet clover silage on the prothrombin time of 601
Boron deficiency in alfalfa in Quebec, Soil and plant analysis as a means of diagnosing 494
Boron-deficient alfalfa stems and leaves as an aid in diagnosing alfalfa yellows, Pathological histology of 488
Broccoli (*Brassica oleracea*. L. Var. *italica* Plenck), Self-incompatibility in green sprouting:
I. Its occurrence and possible use in a breeding program 59
Broiler rations with observations on the nature and control of its metabolic inhibitors, Rapeseed oil meal in 607

Carotenoid pigments of the uredospores of rust fungi, The 234
Cereals in Canada, A study of some seed-borne diseases of:
III. Effect of rate of seeding, percentage of infested kernels, and weeds, on the yield of plots sown with treated and untreated seed 240
Chemical control of the sweetclover weevil, *Sitona cylindricollis* Fahr. (Coleoptera: Curculionidae) 483
Chemicals and of male sterility to control pollen production in corn, The use of ... 48
Chemotherapy of American foulbrood of the honeybee and on the stability of sulpha drugs in honey, Note on current studies on the 120
Clipping frequency on the productivity and root development of Russian wild ryegrass in the field, The effect of 299
Clover for seed production, Note on the management of red 222
Clover plants in the second year of growth, The effects of 2,4-D spray drift on sweet 389
Clover silage on the prothrombin time of blood in cattle, The effect of feeding sweet 601
Clover, The nature and inheritance of seed-coat spotting in permeable-seeded strains of sweet 514
Concentrate pellets and whole grain as a method of feeding laying hens 131

PAGE

Coordinated soil-plant analysis:
II. Accuracy and precision of flame photometric methods for cation analysis 451
Corn, A comparison of moisture determination methods for grain 435
Corn, The use of chemicals and of male sterility to control pollen production in ... 48
Cotton and paper bags for self-fertilizing sunflowers, Note on the value of 326
Creeping-rooted alfalfa for pasture, Developing 269
Crop growth and phosphorus uptake, The effect of P^{32} radiation on 41
Cropping under irrigation, Changes in organic matter and certain other soil constituents in forty years of 177
Crown rot of fruit trees in British Columbia:
III. Resistance trials on apple seedlings obtained from controlled crosses. 539
Cucumbers, Trichothecium foliage rot of greenhouse 469
Cultivation on the organic matter and nitrogen of brown soils, Effect of 406
Cytogenetic studies of sterility in rye 81

2,2′-dipyridyl with iron in presence of organic matter, Note on the reaction of 324
2,4-D spray drift on sweet clover plants in the second year of growth, The effects of 389
DDT, House fly head as site of lethal action of 316
Decomposing leaves, Leachates from:
II. Interaction with soil-forming materials 203
Diethylstilbestrol content of treated lamb tissues, The 292
Diethylstilbestrol on weight gains and carcass grades of feeder lambs, The effect of 288
Digestibility of dry matter of pasture herbage, Plant pigments as internal indicators of 528
Distribution of the underground parts of leafy spurge (*Euphorbia esula* L.) 161

Ensilage production using plastic containers, Note on a simple method for 319
Ewes, The sulphur requirements of mature range 261
Experimental plot seeder, An improved 642

"Feed-Ani" as a ration component for poultry and livestock 36
Fertilizer phosphate availability, The effect of nitrogen additions on 353
Fertility studies on soil types:
IV. Potassium supply and requirement as shown by greenhouse studies and laboratory tests 374
Fertilizing sunflowers, Note on the value of cotton and paper bags for self- 326
Fire-damaged wheat for swine, The nutritional value of 635
Flame photometric methods for cation analysis, Accuracy and precision of 451
Flax varieties, Comparative growth studies of 565
Fleece weight to body weight in range sheep, The relationship of clean 198
Fly head as site of lethal action of DDT, House 316
Foliage rot of greenhouse cucumbers, Trichothecium 469
Forage crops in Central Saskatchewan, Mineral and protein content of 252
Forest vegetation for mobilization of iron, Note on relative capacities of solutions obtained from 542
Fraisier, Gangrènes du 187
Frost damage on the nutritional value of wheat, The effects of 305
Frost-damaged and early-harvested cereal grains for swine, The nutritional value of 624
Fruits and other crops in British Columbia, Root-lesion nematodes associated with root decline of small 429
Fruit trees in British Columbia, Crown rot of:
III. Resistance trials on apple seedlings obtained from controlled crosses 539
Fruit trees in the Okanagan Valley in British Columbia, Zinc deficiency in 545
Fungi, The carotenoid pigments of the uredospores of rust 234

PAGE

Gangrènes du fraisier 187
Genesis of the Oneida series in Southern Ontario, The 614
Genetic improvement in swine as influenced by the size and sex composition of test litters, Rate of 121
Germination of vegetable crops, A study of the effects of temperature and other factors upon the:
I. Sweet corn 137
Germination of weed seeds:
III. The influence of crops and fallow on the weed seed population of the soil 18
Grain as a method of feeding laying hens, Concentrate pellets and whole 131
Grain corn, A comparison of moisture determination methods for 435
Grains for swine, The nutritional value of frost-damaged and early-harvested cereal 624
Greenhouse experiments, Aluminum foil planting boxes for 432
Grinding grains on the efficiency of all-mash rations for laying hens, A study of the effect of the fineness of 10
Growth studies of flax varieties, Comparative 565

Hens, A study of the effect of the fineness of grinding grains on the efficiency of all-mash rations for laying 10
Hens, Concentrate pellets and whole grain as a method of feeding laying 131
Honey, Note on current studies on the chemotherapy of American foulbrood of the honeybee and on the stability of sulpha drugs in 120
Humus type legume inoculants, Studies on:
II. Preparation and effectivity 225

Inheritance of rachis strength in barley, The 152
Insecticidal control of the tuber flea beetle, *Epitrix tuberis* Gent., in the interior of British Columbia, Experiments on the 156
Internal indicators of digestibility of dry matter of pasture herbage, Plant pigments as 528
Iron, Note on relative capacities of solutions obtained from forest vegetation for mobilization of 542
Irradiation, The production of beneficial mutations in barley by 1

Ked (*Melophagus ovinus* L.) on feeder lambs, The effects of the sheep 70
"Kenya Farmer" wheat, Note on the naming of 544
Lambs, Synthetic estrogen in:
I. The effect of diethylstilbestrol on weight gains and carcass grades of feeder lambs 288
II. The diethylstilbestrol content of treated lamb tissues 292
Lambs, The effects of the sheep ked (*Melophagus ovinus* L.) on feeder 70
Leachates from decomposing leaves:
II. Interaction with soil-forming materials 203
Leafy spurge (*Euphorbia esula* L.), Distribution of the underground parts of 161
Legume inoculants, Studies on humus type:
II. Preparation and effectivity 225
Lethal doses of insecticides on oviposition of the tuber flea beetle, *Epitrix tuberis* Gent. (Coleoptera: Chrysomelidae), Note on the effects of 320
Limestone applications on soil composition, potato-scab development and yields of potatoes, barley and clover, The effect of 573
Low temperature resistance of sugar beet and garden beet seedlings treated with sodium TCA and Dalapon, Improvement in 639

PAGE

Male sterility to control pollen production in corn, The use of chemicals and of.... 48
Magnesium deficiency in tobacco, The relation of ammonium and sulphate ions to 281
Management on the organic matter, nitrogen and phosphorus contents of a brown forest soil, Apparent effects of..... 507
Manure, Trace element content of farmyard..... 76
Metabolic inhibitors, Rapeseed oil meal in broiler rations with observations on the nature and control of its..... 607
Mineral and protein content of forage crops in Central Saskatchewan..... 252
Moisture determination methods for grain corn, A comparison of..... 435
Moisture in unsaturated soils, Movement of..... 329
Moisture on substations in southern Saskatchewan, Wheat yield and use of..... 460
Mutations in barley by irradiation, The production of beneficial..... 1

Nitrate in saline areas, Note on high..... 323
Nitrogen additions on fertilizer phosphate availability, The effect of..... 353
Nitrogen, phosphorus, and potassium in nutrient solution, on the fecundity of the two-spotted spider mite, *Tetranychus bimaculatus* Harvey (Acarina: Tetranychidae) reared on cucumber, Effects of various levels of..... 145
Nutrient solutions, Phosphorus content of potato plants in relation to yield and to phosphorus concentrations in..... 644
Nutritional value of fire-damaged wheat for swine, The..... 635
Nutritional value of frost-damaged and early-harvested cereal grains for swine, The 624
Nutritional value of wheat, The effects of frost damage on the..... 305

Oneida series in southern Ontario, The genesis of the..... 614
Onion maggot, *Hylemya antiqua* (Meig.) in the interior of British Columbia, Experiments on control of the..... 385
Orchard sprayers, Effects of pruning on spray deposits from concentrate..... 444
Organic matter and certain other soil constituents in forty years of cropping under irrigation, Changes in..... 177
Organic matter and nitrogen of brown soils, Effect of cultivation on the..... 406
Organic matter, nitrogen and phosphorus contents of a brown forest soil, Apparent effects of management on the..... 507

P^{32} radiation on crop growth and phosphorus uptake, The effect of:
I. Greenhouse studies..... 41
II. Field studies..... 214
Pathological histology of boron-deficient alfalfa stems and leaves as an aid in diagnosing alfalfa yellows..... 488
Peas in Canada—with special reference to seed transmission, Ascochyta diseases of 417
Phosphorus content of potato plants in relation to yield and to phosphorus concentrations in nutrient solutions..... 644
Pink rot of potato tubers on Vancouver Island..... 504
Plant pigments as internal indicators of digestibility of dry matter of pasture herbage..... 528
Plastic containers, Note on a simple method for ensilage production using..... 319
Plot seeder, An improved experimental..... 642
Pollen production in corn, The use of chemicals and of male sterility to control.... 48
Potassium supply and requirement as shown by greenhouse studies and laboratory tests. (Fertility studies on soil types)..... 374
Potato common scab investigations:
I. A survey of disease incidence in southern Ontario..... 53
Potato digger operation and its effect on tuber bruising..... 412

PAGE

Potato plants in relation to yield and to phosphorus concentrations in nutrient solutions, Phosphorus content of 644
Potato-scab development and yields of potatoes, barley and clover, The effect of limestone applications on soil composition, ... 573
Potatoes in Nova Scotia, Zinc for 598
Poultry and livestock, "Feed-Ani" as a ration component for 36
Pruning on spray deposits from concentrate orchard sprayers, Effects of 444
Puccinia graminis of abortive pycnia on wheat, The production of 313
Puccinia graminis var. *Secalis*, The reaction of barley varieties to rye stem rust, ... 473

Rachis strength in barley, The inheritance of 152
Rapeseed oil meal in broiler rations with observations on the nature and control of its metabolic inhibitors 607
Root-lesion nematodes associated with root decline of small fruits and other crops in British Columbia 429
Rust fungi, The carotenoid pigments of the uredospores of 234
Rye, Cytogenetic studies of sterility in 81
Ryegrass in the field, The effect of clipping frequency on the productivity and root development of Russian wild 299
Rye, Seed production studies with Russian wild- 28
Rye stem rust, *Puccinia graminis* var. *Secalis*, The reaction of barley varieties to .. 473

Saline areas, Note on high nitrate in 323
Sawfly resistance in wheat:
I. Types of resistance 582
Seaweed meal in the ration for bacon hogs 181
Seed-borne diseases of cereals in Canada, A study of some:
III. Effect of rate of seeding, percentage of infested kernels, and weeds, on the yield of plots sown with treated and untreated seed 240
Seed-coat spotting in permeable-seeded strains of sweet clover, The nature and inheritance of 514
Seeder, An improved experimental plot 642
Seed production, Note on the management of red clover for 222
Seed production studies with Russian wild-rye 28
Seed transmission, Ascochyta diseases of peas in Canada—with special reference to 417
Self-incompatibility in green sprouting broccoli (*Brassica oleracea*. L. Var. *italica* Plenck):
I. Its occurrence and possible use in a breeding program 59
Sheep ked (*Melophagus ovinus* L.) on feeder lambs, The effects of the 70
Sheep, The relationship of clean fleece weight to body weight in range 198
Smut of barley by means of the Spergon or water-soak treatments, The influence of temperature on the time required to control loose 533
Sodium TCA and Dalapon, Improvement in low temperature resistance of sugar beet and garden beet seedlings treated with 639
Soil and plant analysis as a means of diagnosing boron deficiency in alfalfa in Quebec 494
Soil, Apparent effects of management on the organic matter, nitrogen and phosphorus contents of a brown forest 507
Soil composition, potato-scab development and yields of potatoes, barley and clover, The effect of limestone applications on 573
Soil constituents in forty years of cropping under irrigation, Changes in organic matter and certain other 177

PAGE

Soil-plant analysis, Coordinated:
II. Accuracy and precision of flame photometric methods for cation analysis ... 451
Soil types, Fertility studies on:
IV. Potassium supply and requirement as shown by greenhouse studies and laboratory tests ... 374
Soils, Effect of cultivation on the organic matter and nitrogen of brown ... 406
Soils in Manitoba, The nature and distribution of saline ... 364
Soils, Movement of moisture in unsaturated ... 329
Spider mite, *Tetranychus bimaculatus* Harvey (Acarina: Tetranychidae) reared on cucumber, Effects of various levels of nitrogen, phosphorus, and potassium in nutrient solution, on the fecundity of the two-spotted ... 145
Spray deposits from concentrate orchard sprayers, Effects of pruning on ... 444
Spray for apples, The use of the triethanolamine salt of 2,4,5-trichlorophenoxypropionic acid (Color-Set 1004) as a stop drop ... 65
Sulpha drugs in honey, Note on current studies on the chemotherapy of American foulbrood of the honeybee and on the stability of ... 120
Sulphur requirements of mature range ewes, The ... 261
Sunflowers, Note on the value of cotton and paper bags for self-fertilizing ... 326
Sweetclover weevil, *Sitona cylindricollis* Fahr. (Coleoptera: Curculionidae), Experiments on the chemical control of the ... 483
Swine as influenced by the size and sex composition of test litters, Rate of genetic improvement in ... 121
Swine rations, Antibiotic feed supplements in western Canadian ... 343
Swine, The nutritional value of fire-damaged wheat for ... 635
Swine, The nutritional value of frost-damaged and early-harvested cereal grains for 624
Synthetic estrogen in lambs:
I. The effect of diethylstilbestrol on weight gains and carcass grades of feeder lambs ... 288
II. The diethylstilbestrol content of treated lamb tissues ... 292

Temperature and other factors upon the germination of vegetable crops, A study of the effects of:
I. Sweet corn ... 137
Temperature on the time required to control loose smut of barley by means of the Spergon or water-soak treatments, The influence of ... 533
Temperature resistance of sugar beet and garden beet seedlings treated with sodium TCA and Dalapon, Improvement in low ... 639
Tobacco, The relation of ammonium and sulphate ions to magnesium deficiency in 281
Trace element content of farmyard manure ... 76
Trees in the Okanagan Valley in British Columbia, Zinc deficiency in fruit ... 545
2,4,5-trichlorophenoxypropionic acid (Color-Set 1004) as a stop-drop spray for apples, The use of the triethanolamine salt of ... 65
Trichothecium foliage rot of greenhouse cucumbers ... 469
Tuber bruising, Potato digger operation and its effect on ... 412
Tuber flea beetle, *Epitrix tuberis* Gent., in the interior of British Columbia, Experiments on the insecticidal control of the ... 156
Tuber flea beetle, *Epitrix tuberis* Gent. (Coleoptera: Chrysomelidae), Note on the effects of lethal doses of insecticides on oviposition of the ... 320
Tubers on Vancouver Island, Pink rot of potato ... 504

Ultrasonic vibration on development of barley, Note on the effect of ... 651
Uredospores of rust fungi, The carotenoid pigments of the ... 234

PAGE

Vegetable crops, A study of the effects of temperature and other factors upon the germination of:
I. Sweet corn 137
Vibration on development of barley, Note on the effect of ultrasonic 651

Weather conditions influencing wheat yields in tanks and field plots 552
Weed seeds, Germination of:
III. The influence of crops and fallow on the weed seed population of the soil 18
Wheat for swine, The nutritional value of fire-damaged 635
Wheat, Note on the naming of "Kenya Farmer" 544
Wheat, Sawfly resistance in:
I. Types of resistance 582
Wheat, The effects of frost damage on the nutritional value of 305
Wheat, The influence of variety and predisposing factors on the occurrence of yellow berry (starchiness) in 393
Wheat, The production of *Puccinia graminis* of abortive pycnia on 313
Wheat yield and use of moisture on substations in southern Saskatchewan 460
Wheat yields in tanks and field plots, Weather conditions influencing 552

Yellow berry (starchiness) in wheat, The influence of variety and predisposing factors on the occurrence of 393

Zinc deficiency in fruit trees in the Okanagan Valley in British Columbia 545
Zinc for potatoes in Nova Scotia 598

AUTHOR INDEX

	Page
Allen, C. E.	288, 292, 607
Allen, W. R.	483
Alex, Jack F.	161
Anderson, J. A.	234
Angus, W. J.	528
Anstey, T. H.	59
Atkinson, H. J.	76, 177, 573
Bell, J. M.	36, 252, 305
Benedict, W. G.	432
Bezeau, L. M.	70, 261, 624, 635
Bishop, R. F.	177, 374, 573
Bosher, J. E.	429
Bowland, J. P.	343
Brisson, Germain J.	528
Broadfoot, W. C.	240
Buchannon, K. W.	473
Budd, A. C.	18
Cameron, C. D. T.	181
Cherewick, W. J.	642
Chepil, W. S.	18
Chisholm, D.	598
Chubaty, W.	601
Clark, R. D.	261, 288
Cook, F. D.	323, 406
Corns, William G.	639
Coupland, Robert T.	161
Delong, W. A.	203, 324, 451, 507, 542
Desjardins, J. G.	76
Dimmock, F.	48, 435
Doughty, J. L.	18, 323, 406
Dow, Dorothy S.	607
Downey, R. K.	514
Durkee, A. B.	644
Ellis, J. H.	364
Ellis, Patricia J.	292
Finlayson, D. G.	156, 320, 385
Fisher, D. V.	65
Fredeen, H. T.	121
Gidyk, Mary	305
Giles, G. R.	76
Golubchuk, M.	234
Green, G. J.	313
Greenshields, J. E. R.	389, 514, 601
Groves, J. W.	417
Gunning, C.	225
Handford, R. H.	385
Hansen, D. R.	565
Heeg, T. J.	53
Heeney, H. B.	644
Heinrichs, D. H.	28, 269
Hill, H.	644
Hironaka, R.	343
Ho-Yen, B.	507
Irvine, G. N.	234
Jamieson, C. A.	120
Jenkins, M. H.	10
Johnson, L. P. V.	651
Johnson, T.	313, 473
Jones, Walter	504
Jordan, D. C.	225
Katznelson, H.	120
Kaufmann, M. L.	152
Kelleher, J. S.	483
Kitts, W. D.	319
Knowles, R. P.	28
Lachance, R. O.	488, 494
Lawrence, T.	1
Lehane, J. J.	329, 460, 552
LeRoux, E. J.	145, 316
Lutwick, L. E.	203, 374
MacEachern, C. R.	598
MacIntyre, T. M.	10
MacKay, D. C.	451
MacLean, A. J.	374
MacLeod, L. B.	507
Machacek, J. E.	240
Magee, A. I.	412
Matthews, B. C.	614
McArthur, J. M.	444
McEvoy, E. T.	281
McGregor, W. G.	565
McIntosh, D. L.	539
McKay, Greta	252
McKeen, C. D.	469
McLaren, P. D.	252
Mead, H. W.	240
Mellor, F. C.	539
Mitchell, J.	353
Morrison, Frank O.	316

	PAGE
Mountain, [illegible]	432
Myhr, P. I.	198
Neilson, C. L.	156
Nelson, W. A.	70
Nonnecke, I. L.	137
Obolensky, George	651
O'Neil, J. B.	36, 131
Ouellette, G. J.	488, 494
Parent, R. C.	573
Payette, Albert	187
Penner, E.	41, 214
Peters, H. F.	198
Porritt, S. W.	65
Pratt, L. E.	364
Putt, E. D.	81, 326
Raymond, L. C.	222
Reid, R. F.	614
Rennie, D. A.	353
Richardson, J. K.	53
Roberts, D. W. A.	582
Russell, R. C.	533
Sallans, B. J.	393
Schnitzer, M.	324, 542
Schwerdtfeger, Gilbert	639
Shebeski, L. H.	1, 152
Simmonds, P. M.	393
Skolko, A. J.	417
Slen, S. B.	70, 198, 261
Staple, W. J.	329, 460, 552
Stelfox, H. B.	28
Steppler, H. A.	222, 507
Sylvestre, P. E.	528
Thaine, R.	299
Thorpe, H. C.	544
Torfason, W. E.	137
Tyner, L. E.	533
Waddell, D. B.	444
Wallace, H. A. H.	240
Wallen, V. R.	417
Ward, G. M.	644
Warder, F. G.	323, 406
Warren, F. S.	48, 435
White, W. J.	389, 514, 601
Whiting, F.	70, 261, 288, 292, 624, 635
Wood, A. J.	319
Woodbridge, C. G.	545